



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

04/15/2009

Blakely Sokoloff Taylor & Zafman  
12400 Wilshire Boulevard  
Los Angeles, CA 90025

EXAMINER

WOZNIAK, JAMES S

ART UNIT

PAPER NUMBER

2626

DATE MAILED: 04/15/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,882	04/15/2002	Yan Yonghong	42390.P8351	8063
TITLE OF INVENTION: SPEAKER ADAPTATION USING WEIGHTED FEEDBACK				

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	07/15/2009

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

### HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to:** **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax** **(571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 04/15/2009

Blakely Sokoloff Taylor & Zafman  
 12400 Wilshire Boulevard  
 Los Angeles, CA 90025

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/019,882 04/15/2002

Yan Yonghong

42390.P8351

8063

TITLE OF INVENTION: SPEAKER ADAPTATION USING WEIGHTED FEEDBACK

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	07/15/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
WOZNIAK, JAMES S	2626	704-244000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB-122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB-47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1  
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2  
 3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,882	04/15/2002	Yan Yonghong	42390.P8351	8063
7590 04/15/2009			EXAMINER	
Blakely Sokoloff Taylor & Zafman 12400 Wilshire Boulevard Los Angeles, CA 90025			WOZNIAK, JAMES S	
			ART UNIT	PAPER NUMBER

2626  
DATE MAILED: 04/15/2009

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 986 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 986 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

**Notice of Allowability****Application No.**

10/019,882

**Applicant(s)**

YONGHONG, YAN

**Examiner**

JAMES S. WOZNIAK

**Art Unit**

2626

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 1/26/2009.
2. ☒ The allowed claim(s) is/are 2-4, 6-7, 9-12, 14-15, 17-19, 21-22, 24-27, and 29-38 (now claims 1-30).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

/James S. Wozniak/  
Primary Examiner, Art Unit 2626

**DETAILED ACTION**

***Response to Amendment***

1. In response to the office action from 1/12/2009, the applicant has submitted an amendment, filed 1/26/2009, amending independent claims 4, 6, 12, and 14 in order to overcome the previous 35 U.S.C. 101 rejection (*Amendment, Pages 14-15*). In response to the amended claims, claims 2-4, 6-7, 9-12, 14-15, 17-19, 21-22, 24-27, and 29-38 are allowable over the prior art of record for the below given reasons.
2. In response to amended claim 32-33 and 35, the examiner has withdrawn the previous objection directed towards minor informalities.
3. The applicants' arguments directed towards the previous 35 U.S.C. 101 have been fully considered (*Amendment, Pages 14-15*) and are moot based on the amended claims, but it is worth noting that the examiner respectfully disagrees. It is noted that utterances are not physical things since they are only ephemeral, transient signals. Also, utterances, as were previously claimed were not necessarily limited to an analog signal because they could include data domain signals under analysis (*utterances in the digital data domain, Specification, Page 4*). The previously rejected claims only manipulated data in the data domain, and thus, were non-statutory. The currently amended claims, however, make clear that utterances are received at a speaker input. The specification defines this speaker input as a microphone (*Page 4, Lines 15-*

16). The utterance is also digitized in the claims, which in combination with the microphone, would require the presence of some type of physical hardware since a human could not perform this specific step with consideration of the microphone. Thus, the previous 35 U.S.C. 101 rejection has been withdrawn.

*Allowable Subject Matter*

4. **Claims 2-4, 6-7, 9-12, 14-15, 17-19, 21-22, 24-27, and 29-38** are allowable over the prior art of record.

5. The following is an examiner's statement of reasons for allowance:

With respect to **Claims 4 and 12**, the prior art of record fails to explicitly teach or fairly suggest a method tied to physical hardware for speaker adaptation that utilizes estimated weights based on misrecognized speech utterances as respectively recited in claims 4 and 12, wherein the estimated weights are calculated by computing an average likelihood difference per frame and then computing a weight value by averaging the average likelihood difference over error words (*specification, page 6*).

Although Barnard et al (*U.S. Patent: 7,216,079*) discloses that it is well known in the prior art to mark and weight misrecognized utterance sections for speaker training (*Col. 3, Line 64- Col. 4, Line 11; Col. 5, Lines 16-26; Col. 6, Lines 21-39; and Col. 9, Lines 47-67; and Fig. 3*) and Junqua (*U.S. Patent: 6,253,181*) teaches an equation for calculating an average likelihood difference, as applied to claim 5, Junqua does not teach averaging the average

likelihood difference over all error words to determine a weight for speaker adaptation of a speech recognition model. Thus, claims 4 and 12 are allowable over the prior art of record.

With respect to **Claims 6 and 14**, the prior art of record fails to explicitly teach or fairly suggest a method tied to physical hardware for speaker adaptation that utilizes estimated weights based on misrecognized speech utterances, wherein the estimated weights are calculated by multiplying an average likelihood difference per frame calculated using the equation recited in claims 6 and 14 by the inverse of a number of misrecognized words for a particular speaker as per the equation also recited in these claims.

Although Barnard et al (*U.S. Patent: 7,216,079*) discloses that it is well known in the prior art to mark and weight misrecognized utterance sections for speaker training (*Col. 3, Line 64- Col. 4, Line 11; Col. 5, Lines 16-26; Col. 6, Lines 21-39; and Col. 9, Lines 47-67; and Fig. 3*) and Junqua (*U.S. Patent: 6,253,181*) teaches an equation for calculating an average likelihood difference, Junqua does not teach multiplying the calculated average likelihood by the inverse of a number of misrecognized words for a particular speaker as per the equation recited in claims 6 and 14.

The dependent claims associated with the preceding claims further limit claims containing allowable subject matter, and thus, are also contain allowable subject matter.

With respect to **Claims 19 and 27**, the prior art of record fails to explicitly teach or fairly suggest a computer readable medium storing a program executed by a computer for speaker adaptation that utilizes estimated weights based on misrecognized speech utterances as respectively recited in claims 19 and 27, wherein the estimated weights are calculated by

computing an average likelihood difference per frame and then computing a weight value by averaging the average likelihood difference over error words (*Specification, Page 6*).

Although Barnard et al (*U.S. Patent: 7,216,079*) discloses that it is well known in the prior art to mark and weight misrecognized utterance sections for speaker training (*Col. 3, Line 64- Col. 4, Line 11; Col. 5, Lines 16-26; Col. 6, Lines 21-39; and Col. 9, Lines 47-67; and Fig. 3*) and Junqua (*U.S. Patent: 6,253,181*) teaches an equation for calculating an average likelihood difference, as applied to claim 13, Junqua (*U.S. Patent: 6,253,181*) does not teach averaging the average likelihood difference over all error words to determine a weight for speaker adaptation of a speech recognition model. Thus, claims 19 and 27 are allowable over the prior art of record. The dependent claims associated with claims 19 and 27 further limit claims containing allowable subject matter, and thus, are also allowable over the prior art of record.

With respect to **Claims 21 and 29**, the prior art of record fails to explicitly teach or fairly suggest a computer readable medium storing a program executed by a computer for speaker adaptation that utilizes estimated weights based on misrecognized speech utterances, wherein the estimated weights are calculated by multiplying an average likelihood difference per frame calculated using the equation recited in claims 21 and 29 by the inverse of a number of misrecognized words for a particular speaker as per the equation also recited in these claims.

Although Barnard et al (*U.S. Patent: 7,216,079*) discloses that it is well known in the prior art to mark and weight misrecognized utterance sections for speaker training (*Col. 3, Line 64- Col. 4, Line 11; Col. 5, Lines 16-26; Col. 6, Lines 21-39; and Col. 9, Lines 47-67; and Fig. 3*) and Junqua (*U.S. Patent: 6,253,181*) teaches an equation for calculating an average likelihood difference, Junqua does not teach multiplying the calculated average likelihood by the



inverse of a number of misrecognized words for a particular speaker as per the equation recited in claims 21 and 29. The dependent claims associated with claims 21 and 29 further limit claims containing allowable subject matter, and thus, are also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richmond Dorvil can be reached at (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/James S. Wozniak/  
Primary Examiner, Art Unit 2626